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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/736,015	12/15/2003	Nobutaka Ihara	0941.68799	4153

7590

06/23/2005

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EXAMINER
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KLIMOWICZ, WILLIAM JOSEPH

ART UNIT	PAPER NUMBER
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2652

DATE MAILED: 06/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/736,015

**Applicant(s)**

IHARA ET AL.

**Examiner**

William J. Klimowicz

**Art Unit**

2652

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 7-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 7-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☒ Certified copies of the priority documents have been received in Application No. 09/799,949.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>12-15-03; 8-5-04</u> | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Continuation*

This examined application is a divisional of U.S. Patent Application No. 09/799,949 filed on March 6, 2001, now U.S. patent No. 6,700,761.

The Applicants have voluntarily cancelled claims 1-6, 10 and 11.

Claims 7-9 are currently pending.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 7 is rejected under 35 U.S.C. 102(b) as being anticipated by Johnson (US 5,654,566).

As per claim 7, Johnson (US 5,654,566) discloses a magnetic sensor (e.g., see FIG. 4 in conjunction with FIG. 6B) that senses an external magnetic field using a spin-filtered sensor current flowing (I) through a non-magnetic layer (e.g., 112; 204, 208); and further comprising: a pair of ferromagnetic bodies (F1, F2; 220, 230) provided on the non-magnetic layer (112; 204, 208) and positioned parallel to an axes of magnetization (118, 120) of each of the ferromagnetic bodies (F1, F2; 220, 230); and a power source (e.g., voltage source -  $V_R$ ) that uses the ferromagnetic bodies (F1, F2; 220, 230) as electrodes to supply the sensor current (I); wherein:

Art Unit: 2652

the non-magnetic layer (112; 204, 208) is formed of a semiconductor material; and the axis of magnetization (e.g., 120) of one of the pair of ferromagnetic bodies (F2; 230) changes so as to detect an external magnetic field.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson (US 5,654,566).

See the description of Johnson (US 5,654,566), *supra*.

As per claims 8 and 9, Johnson (US 5,654,566) remains silent with respect to wherein the semiconductor material is indium aluminum arsenide or indium gallium arsenide, respectively.

Official notice is taken that magnetic sensors of the type disclosed by Johnson (US 5,654,566) wherein the semiconductor material is indium aluminum arsenide or indium gallium arsenide, is notoriously old and well known and ubiquitous in the art; such Officially noticed fact being capable of instant and unquestionable demonstration as being well-known.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the semiconductor material of Johnson (US 5,654,566) as being either of indium aluminum arsenide or indium gallium arsenide, as is known.

Art Unit: 2652

The rationale is as follows: one of ordinary skill in the art would have been motivated to provide the semiconductor material of Johnson (US 5,654,566) as being either of indium aluminum arsenide or indium gallium arsenide, as is known in order to provide enhanced ohmic contact and/or a desired/prescribed level of channel conductivity between the source and drain, in a manner that is well known, established and appreciated in the art..

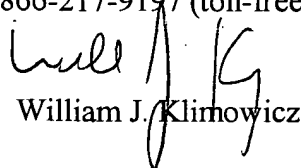
### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicants' disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William J. Klimowicz whose telephone number is (571) 272-7577. The examiner can normally be reached on Monday-Thursday (6:30AM-5:00PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T. Nguyen can be reached on (571) 272-7579. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
William J. Klimowicz

Application/Control Number: 10/736,015

Page 5

Art Unit: 2652

Primary Examiner  
Art Unit 2652

WJK